DE 19846767

AN 2000-319177 [28] WPIX
DNN N2000-239465 DNC C2000-096930
TI Partially conjugated polymer useful as an organic semiconductor or an electroluminescence material, and for display elements in television monitor and illumination technology contains fluorene building units.
DC A26 A85 L03 U11 U14 W03 X26
IN BECKER, H; KREUDER, W; SPREITZER, H
PA (AVET) AVENTIS RES & TECHNOLOGIES GMBH & CO KG
CYC 1
PI DE 19846767 A1 20000420 (200028)* 13p <--
ADT DE 19846767 A1 DE 1998-19846767 19981010
PRAI DE 1998-19846767 19981010
AB DE 19846767 A UPAB: 20000613

NOVELTY - A partially conjugated polymer including structural units containing H, optionally branched alkyl, heteroalkyl, aryl, F, Cl, CN, cycloalkyl, and individual non-adjacent alkyl CH2 groups which can be substituted by O, S, C=O, NR5, or aryl, heteroaryl, and structural units including Ar1 and Ar2, where these are polycyclic conjugated aromatic, with one or more C atoms substituted by N, O, or S is new.

DETAILED DESCRIPTION - The partially conjugated polymer includes structural units of formula (I):

where:

R1,R2 = H, 1-22C optionally branched alkyl, 2-20C heteroalkyl, 5-20C aryl, f, Cl, CN, cycloalkyl, and individual alkyl non-adjacent CH2 groups, which can be substituted by O, S, C=C, COO, N-R5, or 2-10C aryl or heteroaryl, where aryl/heteroaryl can be substituted by one or more non-aromatic R3 substituents,

R3 and R4 = 1-22C alkyl, 2-20C heteroaryl, 5-20C aryl, F, Cl, SO3R5R6, where the alkyl is optionally branched or cycloalkyl, and individual non-adjacent CH2 groups in the alkyl, which can be substituted by O, S, C=O, COO, N-R5, or simply by aryl, and the aryl can be substituted by one or more non-aromatic R3 substituents;

R5 and R6 = H, 1-22C alkyl, 2-20C heteroaryl, 5-20C aryl, where the alkyl is optionally branched or is cycloalkyl; and individual non-adjacent alkyl CH2 groups, which can be substituted by O, S, C=O, COO, N-R5, or simply by aryl, and the aryl can be substituted by one or more non-aromatic R3, and m and n = 0,1,2,or 3, and structural units of formula (II), where Ar1 and Ar2 = a 2-40C mono- or polycyclic conjugated aromatic system, in which one or more C atoms can be substituted by N, O, or S, and one or more R3, and Ar1 and Ar2 can be bonded to a further optionally substituted C- or heteroatom so as to form a common ring,

R1 = one or several 1-22C alkyl, 2-20C heteroalkyl or 5-20C aryl.

The alkyl can be optionally branched or can be cycloalkyl, and individual non-adjacent alkyl CH2 groups can be substituted by O, S, C=O, COO, N-R% or aryl, and the aryl/heteroaryl can contain one or more non-aromatic R3 substituents.

An INDEPENDENT CLAIM is included for an electroluminescence device containing the polymer.

USE - The polymer is useful as an organic semiconductor or an electroluminescence material (claimed), and for display elements in television monitor and illumination technology.

ADVANTAGE - The polymer shows emission in the blue and blue-green spectral zones. Surprisingly, by selection of a special substitution pattern in otherwise typical polymers based mainly on 2,7-fluorenyl building units, the morphological properties are greatly improved without loss of useful properties, e.g. in EL applications.

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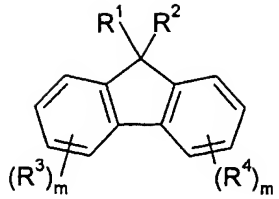
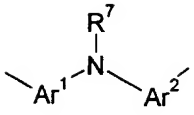


(I)



(II)